DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATERSHED MANAGEMENT

PROPOSED AMENDMENT TO THE
ATLANTIC COUNTY WATER QUALITY MANAGEMENT PLAN,
CAPE MAY COUNTY WATER QUALITY MANAGEMENT PLAN,
MIDDLESEX COUNTY WATER QUALITY MANAGEMENT PLAN,
MONMOUTH COUNTY WATER QUALITY MANAGEMENT PLAN,
OCEAN COUNTY WATER QUALITY MANAGEMENT PLAN AND
TRI-COUNTY WATER QUALITY MANAGEMENT PLAN

TO ESTABLISH 9 TOTAL MAXIMUM DAILY LOADS FOR PHOSPHORUS FOR:
DEAL LAKE, MONMOUTH COUNTY;
FRANKLIN LAKE, MONMOUTH COUNTY;
HAMMONTON LAKE, ATLANTIC COUNTY;
HOOK'S CREEK LAKE, MIDDLESEX COUNTY;
POHATCONG LAKE, OCEAN COUNTY;
LAKE ABSEGAMI, BURLINGTON COUNTY
LILY LAKE, CAPE MAY COUNTY;
NEW BROOKLYN LAKE, CAMDEN COUNTY; AND
DENNISVILLE LAKE, CAPE MAY COUNTY

AND

TO ESTABLISH 31 TMDLs FOR FECAL COLIFORM FOR STREAM SEGMENTS THAT EXTEND INTO ATLANTIC, CAPE MAY, GLOUCESTER, MONMOUTH, AND OCEAN COUNTIES, AS LISTED IN TABLE 2.

Public Notice

Take notice that the New Jersey Department of Environmental Protection (Department) is seeking public comment on two proposed amendments to the Atlantic County Water Quality Management Plan (WQMP), Cape May County WQMP, Middlesex, Monmouth, and Ocean Counties WQMPs and Tri-County WQMP. The first set of amendments would establish nine total maximum daily loads (TMDLs) for phosphorus for the following waterbodies: Deal Lake in Asbury Park City; Loch Arbour Village, Allenhurst, Deal & Interlaken Boros, and Ocean Township; Monmouth County; Franklin Lake in West Long Branch Boro,

Monmouth County; Hammonton Lake in Hammonton Township, Atlantic County; Hook's Creek Lake in Oldbridge Township, Middlesex County; Pohatcong Lake in Little Egg Harbor Township and Tuckerton Boro, Ocean County; Lake Absegami in Bass River Township, Burlington County; Lilly Lake Cape May Point Boro, Cape May County; New Brooklyn Lake in Winslow Township, Camden County; and Dennisville Lake in Dennis Township, Cape May County. The second set of amendments would establish 31 TMDLs for fecal coliform for stream segments that extend into Atlantic, Cape May, Gloucester, Monmouth, and Ocean Counties, as listed in Table 2.

Background

A TMDL represents the assimilative or carrying capacity of a waterbody, taking into consideration point and nonpoint source of pollutants of concern, natural background and surface water withdrawals. A TMDL quantifies the amount of a pollutant a water body can assimilate without violating a state's water quality standards and allocates that load capacity to known point sources in the form of wasteload allocations (WLAs), nonpoint sources in the form of load allocations (LAs), and, as applicable, reserve capacity and a margin of safety. A TMDL is developed as a mechanism for identifying all the contributors to surface water quality impacts and setting goals for load reductions for pollutants of concern as necessary to meet surface water quality standards (SWQS). TMDLs are required, under Section 303(d) of the Federal Clean Water Act, 33 U.S.C. 1313(d), to be developed for waterbodies that cannot meet water quality standards after the implementation of technology-based effluent limitations. TMDLs may also be established to help maintain or improve water quality in waters that are not impaired. Federal regulations concerning TMDLs are contained in EPA's Water Quality Planning and Management Regulations (40 CFR 130).

On September 16, 2002, the New Jersey Department of Environmental Protection (Department) and USEPA Region 2 entered into a Memorandum of Agreement (MOA), which superceded the previous MOA between the Department and EPA. These amendments would establish nine of the twenty-five required TMDLs for eutrophic lakes, and thirty-one of the one hundred required TMDLs for pathogen-impaired streams.

Each TMDL must be proposed and adopted by the Department as an amendment to the appropriate area-wide WQMP(s) in accordance with N.J.A.C. 7:15-3.4(g).

Amendment to establish nine phosphorus TMDLs to address eutrophic lakes

The State of New Jersey's proposed *2002 Integrated List of Waterbodies* (35 N.J.R. 470 (a), January 21, 2003), identifies several lakes in the Atlantic Coastal Water Region as being eutrophic, as indicated by elevated total phosphorus (TP), elevated chlorophyll-*a,* and/or nuisance macrophyte density. The proposed amendment would establish nine total maximum daily loads (TMDLs) for TP that address eutrophication of the lakes listed in Table 1.

Table 1 Eutrophic Lakes for which Phosphorus TMDLs are being established

TMDL Number	Lake Name	Municipality	WMA
1	Deal Lake	Asbury Park City; Loch Arbour Village; Allenhurst, Deal & Interlaken Boros; Ocean Township; Monmouth County	12
2	Franklin Lake	West Long Branch Boro; Monmouth County	12
3	Hammonton Lake	Hammonton Township, Atlantic County	
4	Hook's Creek Lake	Oldbridge Township, Middlesex County	12
5	Pohatcong Lake	Little Egg Harbor Township, Tuckerton Boro; Ocean County	13
6	Lake Absegami	Bass River Township, Burlington County	14
7	Lily Lake	Cape May Point Boro, Cape May County	15
8	New Brooklyn Lake	Winslow Township, Camden County	15
9	Dennisville Lake	Dennis Township, Cape May County	16

These TMDLs serve as the foundation on which restoration plans will be developed to restore eutrophic lakes and thereby attain applicable SWQS. A TMDL is developed as a mechanism for identifying all the contributors to surface water quality impacts and setting goals for load reductions for pollutants of concern as necessary to meet SWQS. The pollutant of concern for these TMDLs is phosphorus, since phosphorus is generally the nutrient responsible for excessive productivity of inland lakes leading to cultural eutrophication. The Department's Geographic Information System (GIS) was used extensively to describe the lakes and lakesheds (drainage basins of the lakes).

In order to prevent impairment of recreational, water supply and aquatic life designated uses; the Surface Water Quality Standards define both numerical and narrative criteria that address eutrophication in lakes due to excessive nutrients. Phosphorus sources for each lake were characterized on an annual scale (kg TP/yr) for both point and nonpoint sources. Runoff from land surfaces comprises a substantial source of phosphorus into lakes. An empirical model, developed by K.H. Keckhow Ph.D. and described in *Modeling Phosphorus Loading and Lake Response Under Uncertainty: A Manual and Compilation of Export Coefficients*, (Reckhow, K.H., M.N. Beaulac and J.T. Simpson, 1980, EPA 440/5-80-011), was used to relate annual phosphorus load and steady-state in-lake concentration of total phosphorus. To achieve the goal of the TMDLs, overall load reductions were calculated for each of the source categories. The implementation plan also calls for the collection of additional monitoring data and the development of a Lake Restoration Plan for each lake for which TMDLs are being established. These plans will consider what specific measures are necessary to achieve the nutrient reductions required by the TMDL, as well as what in-lake measures need to be taken to supplement the nutrient reductions required by the TMDL. In order to track effectiveness of remediation measures (including TMDLs) and to develop baseline and trend information on lakes, the Department will augment its ambient monitoring program to include lakes on a rotating schedule.

There is one non-stormwater point source within New Brooklyn Lake watershed, for Camden County Vocational and Technical School, Winslow Township, Camden County, NJPDES #NJ0031615. The WLA for phosphorous for this facility will be implemented through a permit revision. However, the revision will not take place until a lake restoration plan is completed which will also identify feasible nonpoint source reductions as well. The remaining watersheds do no have point sources other than stormwater. The TMDL identifies all the phosphorous contributions and establishes WLAs and LAs expressed as maximum loads for phosphorous necessary to meet surface water quality standards. WLAs were established for point sources of phosphorous: regulated stormwater runoff from medium/high density residential, low density/rural residential, commercial, industrial, and missed urban/other urban land uses, as well as the single discharge from the sewage treatment plant. LAs were established for major categories of nonpoint sources of phosphorous: runoff from non-urban land uses, discharge from septic systems, air deposition onto the lake surface, internal sources such as sediment resuspension, and upstream tributary load from the area outside the immediate lakeshed.

With the implementation of follow-up monitoring and development of Lake Restoration Plans through the watershed management process, the Department has reasonable assurance that New Jersey's Surface Water Quality Standards will be attained for these lakes. Activities directed in the watersheds to reduce nutrient loadings shall include a host of options, including but not limited to education projects that teach best management practices, approval of projects funded by CWA Section 319 Nonpoint Source (NPS) Grants, recommendations for municipal ordinances to limit feeding of wildlife and pooper-scooper requirements, and stormwater control measures.

The proposed amendment consists of a detailed report that provides the technical and regulatory basis for these TMDLs, and is available from the Department as described below.

Background relating to the amendment to establish 31 fecal coliform TMDLs to address impaired streams

The State of New Jersey's *2002 Integrated List of Waterbodies* (35 N.J.R. 470 (a), January 21, 2003), *identifies* numerous waterbodies in the Atlantic Coastal Water Region as being impaired by pathogens, as evidenced by the presence of high fecal coliform concentrations. The proposed amendment would establish 31 TMDLs addressing fecal coliform loads to the waterbodies identified in Table 2.

Table 2 Fecal coliform-impaired stream segments in the Atlantic Coastal Water Region, identified in Category 5 of the 2002 Integrated List of Waterbodies, for which fecal coliform TMDLs are being established.

TMDL Number	WMA	Station Name/Waterbody	County(s)
1	12	Hollow Brook at Rt 35 in Neptune Twp	Monmouth
2	12	Wreck Pond Brook at Allenwood Rd in Wall	Monmouth
3	12	Squankum Brook at Easy St in Howell	Monmouth
4	12	Big Brook at Maywood Drive in Marlboro	Monmouth
5	12	Whale Pond Brook at Route 35 in Eatontown	Monmouth
6	12	Lafetras Brook at Hope Rd in Tinton Falls	Monmouth
7	12	Husky Brook at South St in Eatontown	Monmouth
8	12	Pine Brook at Hockhockson Rd in Tinton Falls	Monmouth
9	12	Willow Brook at Willow Brook Rd in Holmdel	Monmouth
10	12	Ramanessin Brook at Willow Rd in Holmdel	Monmouth
11	12	Bordons Brook at Route 520 in Holmdel	Monmouth
12	12	Barren Neck Bk at Long Bridge Rd in Colts Neck	Monmouth
13	12	Big Brook at Laurelwood Dr in Colts Neck	Monmouth
14	12	Town Brook at Middletown	Monmouth
15	12	Yellow Brook near Malboro	Monmouth
16	12	Poplar Brook at Deal	Monmouth
17	12	Long Brook at Wyckoff Mills	Monmouth
18	12	Marsh Bog Brook at Squankum	Monmouth
19	12	Manasquan River at Squankum	Monmouth
20	12	Mingamahone Brook near Earle	Monmouth
21	13	Toms River at Route 537 in Millstone	Ocean and Monmouth
22	13	Muddy Ford Brook at Lakewood-Allenwood Rd in Howell	Monmouth
23	13	Haystack Brook at Maxim-Southard Rd in Howell	Monmouth
24	13	Titmouse Creek at Friendship Rd in Howell	Monmouth
25	13	North Branch Metedeconk River at Lakewood	Ocean and Monmouth

TMDL Number	WMA	Station Name/Waterbody	County(s)
26	13	South Branch Metedeconk River near Laurelton	Ocean and Monmouth
27	13	Toms River near Toms River	Ocean
28	14	Hammonton Creek at Westcoatville	Atlantic
29	15	Hospitality Branch at Blue Bell Road near Ceci	Gloucester
30	15	Great Egg Harbor River at Weymouth	Atlantic
31	16	Savages Run in Belleplain State Forest	Cape May

These thirty one TMDLs will serve as management approaches or restoration plans aimed at identifying the sources of fecal coliform and for setting goals for fecal coliform load reductions in order to attain applicable surface water quality standards (SWQS).

As stated in N.J.A.C. 7:9B-1.14(c) of the New Jersey Surface Water Quality Standards for FW2 waters, “Fecal coliform levels shall not exceed a geometric average of 200/100 ml nor should more than 10 percent of the total samples taken during any 30-day period exceed 400/100 ml.” Nonpoint and stormwater sources are the primary contributor to fecal coliform loads in these streams and can include storm-driven loads transporting fecal coliform from sources such as geese, farms, and domestic pets to the receiving water. Nonpoint sources also include steady-inputs from sources such as failing sewage conveyance systems and failing or inappropriately located septic systems. Because the total source contribution from sewage treatment plants is an insignificant fraction of the total load, these fecal coliform TMDLs will not impose any change in current practices for Sewage Treatment Plants and will not result in wasteload allocations or changes to existing effluent limits for these facilities.

Using ambient water quality data, summer and year-round geometric means were determined for each waterbody segment in the Atlantic Coastal water region included on Sublist 5 of the 2002 Integrated List of Waterbodies (also known as the 303 (d) list) based on water quality monitoring conducted during

the water years 1994-2000. Given the two-part surface water quality criteria of 200 CFU/100 ml and 400 CFU/100 ml applicable to fecal coliform in FW2 waters, computations were necessary for both criteria, which resulted in two values for percent reduction for each stream segment. In order to assure compliance with the SWQS the higher (more stringent) percent reduction value was selected as the TMDL and will be applied to nonpoint and stormwater sources as a whole.

The TMDL report provides extensive information to assist with more specific identification of sources. Load duration curves, which are useful in identifying and differentiating between storm-driven and steady-input sources, are provided for stream segments for which streamflow gauge information is available. The Department, in collaboration with the local Technical Advisory Committees, narrowed the potential primary sources of fecal coliform contamination to these waterbody segments to the following:

Non-Human Sources of Fecal Coliform

- Canada geese, pest waterfowl and other wildlife
- Pet Waste
- Stormwater basins which can act as accumulation points of fecal matter (from pets, waterfowl and wildlife)
- Direct stormwater discharges to waterbodies
- Farms, zoos

Human Sources of Fecal Coliform

- Malfunctioning or older improperly sized septic systems
- Failing Sewerage Conveyance Systems
- Improper garbage storage and disposal

In addition, other potential sources of fecal contamination specific to each stream segment are identified in the TMDL report. When bacterial sources are adequately identified, Best Management Practices (BMPs) specified in the TMDL

Report for each source category will be applied to reduce bacterial loading to meet the SWQS. When bacterial sources are not easily identifiable, the TMDL requires bacterial source tracking (advanced chemical, biochemical and molecular monitoring methods) to be used in conjunction with the resulting percent load reduction and load duration curves to further identify pathogen sources.

TMDLs include both short-term and long-term management strategies. Short-term management strategies include existing projects funded by the Department to address fecal impairments to an impaired waterbody. These projects for the most part include stream bank restoration projects, stormwater retrofits, and implementation of BMPs. Nonpoint Source Pollution Control and Management Implementation Grants have been awarded by the Department since 1995 to local and regional organizations for projects that implement management practices for nonpoint source control.

While short-term management measures will begin to reduce sources of fecal coliform in the Atlantic Coastal Water Region, additional measures will be needed to verify and further reduce or eliminate these sources. Long-term management strategies are provided for each source category. Long-term strategies include, for instance, the development of Stormwater Management Plans and Canada Goose Damage Management Plans.

The proposed amendment consists of a detailed report that provides the technical and regulatory basis for these TMDLs, and is available from the Department as described below.

Public Comment Information

This notice is being given to inform the public that plan amendments are being proposed for the Atlantic County WQMP, Cape May County WQMP, Middlesex,

Monmouth, and Ocean Counties WQMPs, and the Tri-County WQMP. All information related to these proposed amendments to is located at the Department, Division of Watershed Management, PO Box 418, 401 East State Street, Trenton, New Jersey 08625-0418. If you wish to receive a copy of the draft TMDL that establishes 9 phosphorus TMDLs and 31 fecal coliform TMDLs call the Division of Watershed Management at (609) 633-3812 or download the file from: http://www.state.nj.us/dep/watershedmgt/publications.htm. The Department's file is available for inspection between 8:30 a.m. and 4:00 p.m., Monday through Friday. An appointment to inspect the documents may be arranged by calling the Division of Watershed Management at (609) 633-3812. Additional copies of the amendment may be also obtained by calling this number. An electronic copy of the TMDL Report may be requested via electronic mail sent to: H20SHED@dep.state.nj.us.

Interested persons should submit written comments on the proposed amendment to Barbara Hirst, Bureau Chief, New Jersey Department of Environmental Protection, Division of Watershed Management, P.O. Box 418, 401 East State Street, Trenton, New Jersey, 08625. All comments must be submitted within 15 days following the public hearing noted below. The Department shall consider all comments submitted prior to the close of the comment period in reviewing the proposed amendment.

The Department requests that commenters who have access to current word processing software additionally submit comments on this proposed amendment electronically using a 3½-inch diskette mailed to the address above or via electronic mail sent to the Department at H20SHED@dep.state.nj.us. The preferred word processing software for submitting comments is Microsoft Word for Windows 97. Any commenter who wishes to use other software is encouraged to contact Ms. Hirst to check for compatibility (609-633-1441). MacIntosh formats should not be used. Submission of a diskette or via electronic mail in addition to written comment is not required.

The Department is holding a public hearing on the proposed amendment at the following time and place:

Date: May 22, 2003

Time: 7:00 pm. The public hearing will be held until 9:00 pm or the end of testimony, whichever is earliest.

Location: Manasquan Reservoir Environmental Center
331 Georgia Tavern Road
Howell, New Jersey 07738

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Lawrence J. Baier, Director
Division of Watershed Management
Department of Environmental Protection

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Date